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| **Chapter 10 / Lesson 2- How Does Matter Change States** |
| **NGSS**  5-PS1-3 Make observations and measurement to identify materials based on their properties. |
| **CCSS:**  SL.4.1d Review the key ideas expressed and explain their own ideas and understanding in light of the discussion.  **Explanation of Importance:** (Danielson o1E, 2C, 3A,3B, 3C) It is important for me to understand what matter is as everything is made of matter. |
| **Aim:** How does matter change states? |
| **Objective:** All students will be able to give an example of how matter can change states. |
| **Vocabulary**:  Solid, liquid, gas, mass, water vapor, volume, density, physical properties.  **Possible Roadblocks**: Some students have trouble understanding new vocabulary words, even thought hey are highlighted and defined in the text. Prior to the lesson all students play a vocabulary game. Those students still having difficulty will work with students who mastered the vocabulary and they will share strategies on how to master the words. |
| **Instructional Materials and Resources**: (Danielson 1D, 1E, 3C)   1. Science text book pages 342-347 2. Notebooks and pencils 3. Vocabulary jigsaw 4. Pictures of state of matter, real objects in the classroom |
| **Essential / Higher Level Question Focus (Danielson 3A, 3B, 3C, 3D, 4D):** (I’ve incorporated the question focus based on a book I read over the summer *titled Make Just One Change, Teach Students to Ask Their Own Questions* by, Dan Rothstein and Luz Santana. According to the authors, providing students with a concise focus statement will help to lead them on the path to developing their own questions which fosters higher level thinking.)  **Question Focus:**   * Matter   **My Questions:**   * Explain what matter is and where is it found. * What is the difference between volume and matter? * How would you describe the physical characteristics of an orange? * What are the 3 states of matter? * Describe how matter can changes states. Give examples.   1. ***Open / Engage:***   2. Read and discuss aim, vocabulary and standards. (Students know that the standards are objectives for students on their grade level to meet and that most of the country follows the CCSS.   3. Think about what matter is. – It is anything that takes up space. Everything around us , incuding us is made up of matter.   1. Who can name three items that take up space, therefore, are matter? (Students will volunteer answers)   1. Now, who can name 3 states of matter? (Solid, Liquid and Gas)  * Solids have particles that are packed tightly together in a pattern. This pattern gives solids an exact shape such as a ball or a chair. (Students provide the examples) * We know that particles in matter are always moving but in solids, they are too tightly packed to move around. Instead, they vibrate in place. * In liquids, particles have more movement sliding around taking the shape of their container. A liquid also takes up a certain amount of space but, if you spill it, its hape changes as its articles slide around. (Students provide examples of liquids) * A gas has no definite shape or volume ad its particles move fastest of the 3 states of matter. When youopen a container and release a gas into the air, its particles quiclu move away. Like when you spray perfume you smell it immediately and then it kind of disappears. Its particles move away quickly and the small gets waker as they spread out. (Students will provide other examples of gases that cannot be seen)   Today we’re focusing on the changes that matter can go through.  **Guided Practice**- Lets think about the 3 types of matter and what possible changes they could go through and why?   * Students will create a graphic organizer in their notebooks with a 4 column headers: Solids, Liquids, Gases, changes from \_\_\_to\_\_\_ / no change. (I’ll guide them to choose matter than can change states.) * Chart will be on display on Promethean that they can copy and together we’ll fill in different items that correspond with the columns. I’ll start us off. In solids, I can enter the word “rock” because it is a solid. Does it change? (Students will volunteer answer and we’ll check off no change.)   **Independent Practice-** Students will work in groups to read designated text pages, take notes and then teach a different group about what they learned. Group 1 will read page 350-351, Group 2 will read page 352-353, Group 3 will read pages 354-355. I will circulate, assess and assist as need and students will share out when they are done.  (Students who compete all activities will move on to computer website to explore classifying states of matter further) |
| **Assessment**: At the end of the class I will ask the students to talk about one thing they learned.  Teacher will assess the way the student worked by using the assessment sheet with points the class has been using all year. |
| **Close / Debrief / Assess (5 Minutes):**  We will reconvene to address any questions, comments or concerns and to answer the aim: How does matter change states? |
| **Access for All** (Danielson 1A, 1B, 1D, 3A, 3E, 4A):  **Low-** Students will work closely with teacher and or buddy using video / manipulatives / prompts/ visuals and peer partners as needed.  **Medium** – Students will work independently and teacher will circulate, assess and assist as **needed.**  **High –** Students will work independently and teachers will assist as needed. They’ll work on enrichment pages, flash cards, common core cards and or ww.internet4classrooms to choose a science activity to work on. |
| Homework (HW): Change of State worksheet from ecosystem for kids: <http://www.ecosystemforkids.com/change-of-state.html> |